



SAFETY HEALTH AND  
ENVIRONMENTAL AFFAIRS

SEP 15 1992

ORIGIN

# MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 7338 LIQUID

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 7338 LIQUID

DESCRIPTION: An aqueous solution of glutaraldehyde

NFPA 704M/HMIS RATING: 3/3 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER  
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

## SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Glutaraldehyde	111-30-8	40-70

## SECTION 3 PRECAUTIONARY LABEL INFORMATION

DANGER: Corrosive. Causes burns. Causes irreversible eye damage. Avoid breathing vapors. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and gloves when handling. Harmful if swallowed. May cause skin sensitization.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

## SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.

INGESTION: Do not induce vomiting. Do not give anything to drink. Seek medical advice with urgency.

INHALATION: Remove to fresh air. Treat symptoms. Call a physician at once.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use



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## SECTION 4 FIRST AID INFORMATION

( CONTINUED )

of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

## SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Corrosive to the eyes with possible permanent damage depending on the length of exposure and on the first aid action given.

SKIN CONTACT: Corrosive to the skin, possibly resulting in third degree burns depending on the length of exposure and on the first aid action given. Can be harmful if absorbed. Can cause allergic contact dermatitis in susceptible individuals.

INGESTION: Can be harmful or fatal.

INHALATION: Can be corrosive to the mucous membranes and the lungs.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

## SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have been conducted on this product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):  $LD_{50} = 605 \text{ mg/kg}$

95% Confidence Limit = 423 - 852 mg/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS):  $LD_{50} = 897 \text{ mg/kg}$

95% Confidence Limit = 395 - 2,025 mg/kg

ACUTE INHALATION TOXICITY (ALBINO RATS):  $LC_{50} = \text{Greater than } 2.5 \text{ L/minute}$  saturated vapor (6-8 hour exposure) resulted in no deaths.

COMMENTS: Examination of sacrificed animals showed no abnormalities.

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS): Corrosive



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## SECTION 6 TOXICOLOGY INFORMATION

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COMMENTS: Two of six animals developed scar tissue which rates this is a corrosive.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS): Severe irritant

COMMENTS: At levels of 0.2% and below of glutaraldehyde no eye irritation was noted. Levels above 0.2% of glutaraldehyde produced moderate to severe irritation and corneal injury.

SKIN SENSITIZATION: At levels of 0.2% and lower no sensitization occurred in human studies. Higher levels produced allergic contact dermatitis. Cross reaction with formaldehyde or from lower concentrations of glutaraldehyde does not occur.

OTHER TOXICITY RESULTS: Doses of 25 and 50 mg/kg given by gavage to pregnant rats produced decreases in maternal body weight. There were no other indications of maternal toxicity nor were there evidence of fetotoxicity or external, visceral or skeletal abnormalities. Mice (CD-1 strain) given 100 mg/kg by gavage showed fetotoxicity as evidenced by decreased body weight. At lower doses, there was no evidence of fetotoxicity or skeletal abnormalities. No evidence of teratogenic effects were noted in either species.

Mutagenicity in vitro tests of Chinese Hamster ovary, sister chromatid exchange and unscheduled DNA synthesis did not produce dose-related responses. Oral doses of 30 and 60 mg/kg to miced showed no effect in the dominant lethal assay. In all five strains of Salmonella, with and without metabolic activation by S9 liver homogenate, no mutagenic response was noted.

Glutaraldehyde incorporated into the diet of rats up to 1.6 g/kg for seven days resulted in no deaths. An 11 week drinking water study of glutaraldehyde at up to 0.5% showed no effect.

## SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear	FORM: Liquid	ODOR: Sharp aldehyde
DENSITY:	9.3 lbs/gal.	
SOLUBILITY IN WATER:	Completely	
SPECIFIC GRAVITY:	1.12 @ 20 Degrees F	ASTM D-1298
pH (NEAT) =	4.1	ASTM E-70
VISCOSITY:	13.6 cps @ 68 Degrees F	ASTM D-2983
FREEZE POINT:	1.4 Degrees F	ASTM D-1177
FLASH POINT:	None (PMCC)	ASTM D-93
VAPOR PRESSURE:	15 mm Hg @ 20 Degrees C	ASTM D-323
EVAPORATION RATE:		



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## SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

( CONTINUED )

(Ether = 1) 0.88 ASTM D1901

NOTE: These physical properties are typical values for this product.

## SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None (PMCC) ASTM D-93

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

UNUSUAL FIRE AND EXPLOSIVE HAZARD: Vapors are irritating.

## SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

STORAGE: Avoid storage at temperatures above 100 Degrees F. Storage stability is dependent on pH and temperature. Optimum stability when stored at pH of 3.7 - 4.5 and 25 - 37 Degrees C.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO<sub>2</sub>, may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

## SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: If it is possible to generate significant levels of vapors or mists, a NIOSH approved or supplied air respirator is recommended.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, mists or aerosols may be released.

PROTECTIVE EQUIPMENT: Wear gloves, boots, apron and a face shield with chemical splash goggles. A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.



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## SECTION 10 PERSONAL PROTECTION EQUIPMENT

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If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

## SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

### SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be deep-well injected in accordance with local, state, and federal regulations.

## SECTION 12 ENVIRONMENTAL INFORMATION

AQUATIC DATA: The aquatic toxicity studies shown below have been performed on 50% glutaraldehyde:

96 hour static acute  $LC_{50}$  to Bluegill Sunfish = 22.4 ppm

96 hour no observed effect concentration is 10 ppm based on no mortality or abnormal effects.



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## SECTION 12 ENVIRONMENTAL INFORMATION

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96 hour static acute  $LC_{50}$  to Rainbow Trout = 23.7 ppm

96 hour no observed effect concentration is 18 ppm based on no mortality or abnormal effects.

48 hour static acute  $LC_{50}$  to Daphnia Magna = 11.5 ppm

48 hour no observed effect concentration is 5 ppm based on no mortality or abnormal effects.

Wildlife toxicity studies shown below have been performed on 50% glutaraldehyde:

8-day dietary  $LC_{50}$  to Bobwhite Quail = 10,000 ppm

8-day dietary  $LC_{50}$  to Mallard Duck = 10,000 ppm

Acute oral  $LD_{50}$  to Mallard Duck = 933 mg/kg

Degradation is 89% after 5 days

If released into the environment, see CERCLA in Section 14.

## SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - CORROSIVE LIQUID, N.O.S.  
CORROSIVE MATERIAL UN 1760  
CONTAINS - GLUTARALDEHYDE

## SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

### FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Glutaraldehyde - Corrosive, sensitizer

Glutaraldehyde = Ceiling 0.2 ppm, 0.82 mg/m<sup>3</sup> ACGIH/TLV

Glutaraldehyde = Ceiling 0.2 ppm, 0.8 mg/m<sup>3</sup> OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:



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## SECTION 14 REGULATORY INFORMATION

( CONTINUED )

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986  
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):  
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard  
XX Delayed (chronic) health hazard  
-- Fire hazard  
-- Sudden release of pressure hazard  
-- Reactive hazard

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

U. S. DEPARTMENT OF AGRICULTURE (USDA):

USDA Inspection and Grading Programs - Food Safety and Inspection Service:  
This product is authorized by USDA for use in federally inspected meat and poultry plants. Authorized uses are under category G5, G7.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

This product is exempted under TSCA and regulated under FIFRA. The inerts are on the Inventory List.

FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA):

EPA Reg. No. 10352-22-1706. This product is registered for use as a microorganism control chemical used in industrial recirculating cooling water tower systems and used in air washer systems. In all cases follow instructions on the product label.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:  
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15  
(formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):  
None of the ingredients are specifically listed.



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## SECTION 14 REGULATORY INFORMATION

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CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:

This product does not contain ingredients covered by the Clean Air Act.

### STATE REGULATIONS:

#### CALIFORNIA PROPOSITION 65:

This product does not contain any chemicals which require warning under California Proposition 65.

#### MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

### STATE RIGHT TO KNOW LAWS:

Regulated in those states using the TLV for glutaraldehyde as a criteria for listing.

## SECTION 15 ADDITIONAL INFORMATION

None

## SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

## SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

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PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

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Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

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DATE CHANGED: 06/20/91

DATE PRINTED: 06/27/92



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